

Taxonomy of the *Dalea phleoides* (Fabaceae) complex

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ABSTRACT

Dalea phleoides is largely confined to eastern Texas, having first been proposed by Torrey & Gray in 1838 from collections gathered by Leavenworth; Shinnars (1949) separated from this *D. drummondiana*, the latter reduced to varietal status of *D. phleoides* by Barneby (1977) as *D. p. var. microphylla*. I follow the treatment of Shinnars, adding a new specific name to the complex, ***Dalea carrizoana*** B.L. Turner, **sp. nov.**, this, so far as known, largely confined to southern Texas. A photograph of the holotype is presented, along with maps showing distributions of the taxa concerned. Published on-line www.phytologia.org *Phytologia* 95(4): 274-278 (Nov. 1, 2013). ISSN 030319430

KEY WORDS: Fabaceae, *Dalea*, *D. drummondiana*, *D. phleoides*, *D. carrizoana*, Texas

Barneby (1977) presented a thorough overview of *D. phleoides* (Torr. & Gray) Shinnars and *D. drummondiana* Shinnars, treating these as but varieties under his broad concept of the former, although admitting that the two taxa “are found to have substantially different but at the same time widely overlapping ranges of dispersal and where they overlap a common habitat.” Barneby used the following key to distinguish the two taxa:

1. Primary cauline leaves with 6-10 (12) pairs of leaflets up to 5-14 mm long;
axis of spike and exterior of calyx glabrous or almost so.....**var. phleoides**
1. Primary cauline leaves with 12-20 (24) pairs of leaflets up to 2-7 mm long;
axis of spike and calyx-tube, at least at base, often throughout,
having pilosulous, spreading-incurved, hairs.....**var. microphylla**

In the present treatment, I recognize three species within the populational complex concerned, as follows:

1. Leaves with leaflets mostly 6-14 mm long; calyces mostly 3.0-3.5 mm long;
far eastern Texas.....**D. phleoides**
1. Leaves with leaflets mostly 2.5-6.0 mm long; calyces 2.5-3.0 mm long.....**(2)**
2. Leaves (mostly), and axis of inflorescence pubescent; calyx tubes
pubescent; eastern Texas.....**D. drummondiana**
2. Leaves, and axis of inflorescence glabrous; calyx tubes
glabrous; southern Texas.....**D. carrizoana**

DALEA CARRIZOANA B.L. Turner, **sp. nov.** **Fig. 1**

Perennial herbs, 30-60 cm high, branched basally from deep ligneous taproots. **Stems** glabrous, glandular-punctate. **Leaves** (mid-stem), 2-5 cm long, glabrous throughout, odd-pinnate, with 5-9 pairs of lateral leaflets, 3-7 mm long, 0.5-1.0 mm wide, upper surfaces eglandular, the terminal leaflets 1-2 mm longer than the laterals. **Inflorescences** (the petals excluded), 6-9 mm wide, 3-6 cm long, the floral axis glabrous; peduncles glabrous, 10-18 cm long. **Calyx** glabrous, 2.5-3.0 mm long, glandular-pustulate throughout; tubes 2.0-2.5 mm long, the lobes ca 0.6 mm long. **Petals** white, the banner ca 5 mm long, claw ca 2.5 mm long, the blade cordate. **Pods** ca 2 mm high, 2 mm wide, laterally pilosulous to glabrate.

TYPE: U.S.A. TEXAS. DIMMIT CO., “Deep sandy soil on Carrizo sand outcrop near Carrizo Springs.” 2 May 1954, *B.C. Tharp & M.C. Johnston 3515* (Holotype: TEX).

ADDITIONAL SPECIMENS EXAMINED: TEXAS. CALDWELL CO. (?): w/o locality, Spring-summer, 1931, *MacBride s.n.* (TEX). **DE WITT CO.**: western part of county, 20 Jul 1941, *Riedel s.n.* (TEX). **DIMMIT CO.**: ca 3.5 mi W of Carrizo Springs, 29 Jun 1899, *Bray (?) s.n.* (TEX); 14 mi NW of Carrizo Springs along route 277, 8 Jul 1958, *Correll & Johnston 19479* (LL). **KARNES CO.**: ca Ecletto Creek, hwy 627, 25 Jul 1952, *Johnson 998* (TEX); 2.5 mi NE Panna Maria, 6 Jun 1953, *Johnson 1259* (TEX). **WILSON CO.**: “Kicaster School.” 24 Jun 1935, *Cory 15076* (TEX).

Dalea carrizoana is readily distinguished from *D. phleoides* by its smaller leaves and narrower flowering spikes (6-9 mm wide vs 10-11 mm wide); it is also quite different from the more closely allopatric, *D. drummondiana*, in having glabrous calyx tubes and a glabrous floral axis, as noted in the above key.

Wemple (by annotation, TEX) included specimens of the present novelty within his concept of *D. phleoides*, as did Turner (1959) in his treatment of *The Legumes of Texas*. Barneby (1977) did not cite or annotate the sheets concerned, presumably not having examined them. The Caldwell county specimen is queried since it is likely that the collection was made elsewhere by the collector concerned, perhaps in more southern outcrops of the Carrizo sands.

The novelty is named for the city of Carrizo Springs, near from which was obtained type material. While the type of the species was obtained from the Carrizo sands near that municipality, it seems not confined to the latter substrate (as does *Hymenopappus carrizoanus*, Turner et al., 2003), hence my reluctance to base the name on that well known geological outcrop. Distribution of the taxon is shown in Fig. 2.

It should be noted that the species is apparently quite rare; attempts to re-collect the taxon in Dimmit Co. in the late spring of 2013 proved unsuccessful, in spite of several hours of roadside searching.

DALEA DRUMMONDIANA Shinnery, Field & Lab. 17: 83. 1949.

Dalea phleoides var. *microphylla* (Torr. & Gray) Barneby

Kuhnistera microphylla (Torr. & Gray) A. Heller

Petalostemon microphyllus (Torr. & Gray) A. Heller

Petalostemon phleoides var. *microphyllum* Torr. & Gray

This taxon is relatively common throughout most of east Texas (Fig.3), and is largely sympatric with its closest relative, *D. phleoides* (Fig. 2). The two species, so far as known, have not been collected growing together, and both are relatively well marked, hence their treatment as species, much as Wemple (1970) accorded the taxa. Barneby (1977), however, treated the two taxa as but varietally distinct.

Specimens of *D. drummondii* usually have leaflets to some degree pubescent; however, a single collection of the latter from Brown Co., Texas, having leaflets glabrous throughout was incorrectly annotated by Barneby (TEX) as *D. leporina*, a species of Trans-Pecos Texas, which it superficially resembles.

DALEA PHLEOIDES (Torr. & Gray) Shinnery, Field & Lab. 17: 83. 1949.

Dalea glandulosa (Coulter & Fisher) Shinnery, not *Dalea glandulosa* (Blanco) Merrill

Kuhnistera phleoides (Torr. & Gray) O. Kze.

Petalostemon glandulosus Coulter & Fisher

My treatment of this taxon is about the same as that of Barneby (1977), with the exception of *D. drummondiana*. Barneby failed to recognize *D. carrizoana*, not having examined, so far as known, any of the several sheets cited herein. Wemple (1970) identified several of the *D. carrizoana* sheets at TEX as *D. phleoides*, presumably because of the glabrous floral axis and calyces, such as occurs in the latter. Regardless, I find *D. carrizoana* quite distinct, possessing characters of both *D. phleoides* and *D. drummondiana*, having fewer leaflets as in the former, but the habit and smaller leaflets of the latter.

The type of *D. phleoides* was reportedly collected in the state of Arkansas by Leavenworth; however, Barneby (1977) noted that type material was most likely obtained by Leavenworth in his travels through eastern Texas during the years 1834 or 1837.

ACKNOWLEDGEMENTS

The dot maps are based upon specimens on file at LL, TEX, and those cited by Barneby (1977). My long time companion, Jana Kos, accompanied me in the field, and edited the paper providing helpful suggestions.

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Fig. 1. *Dalea carrizoana* (holotype).

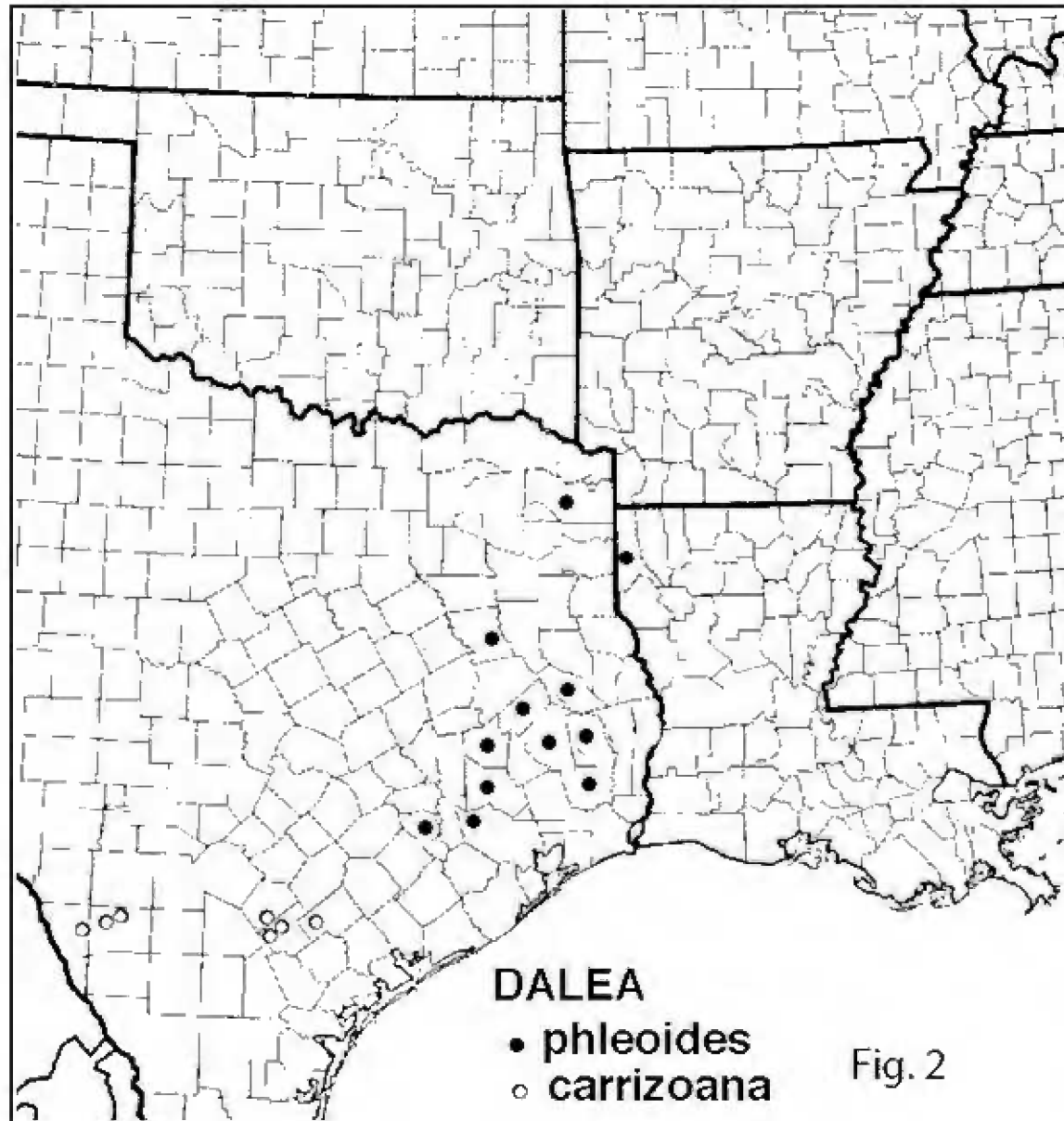


Fig. 2. Distribution of *Dalea carrizoana* and *D. phleoides*.

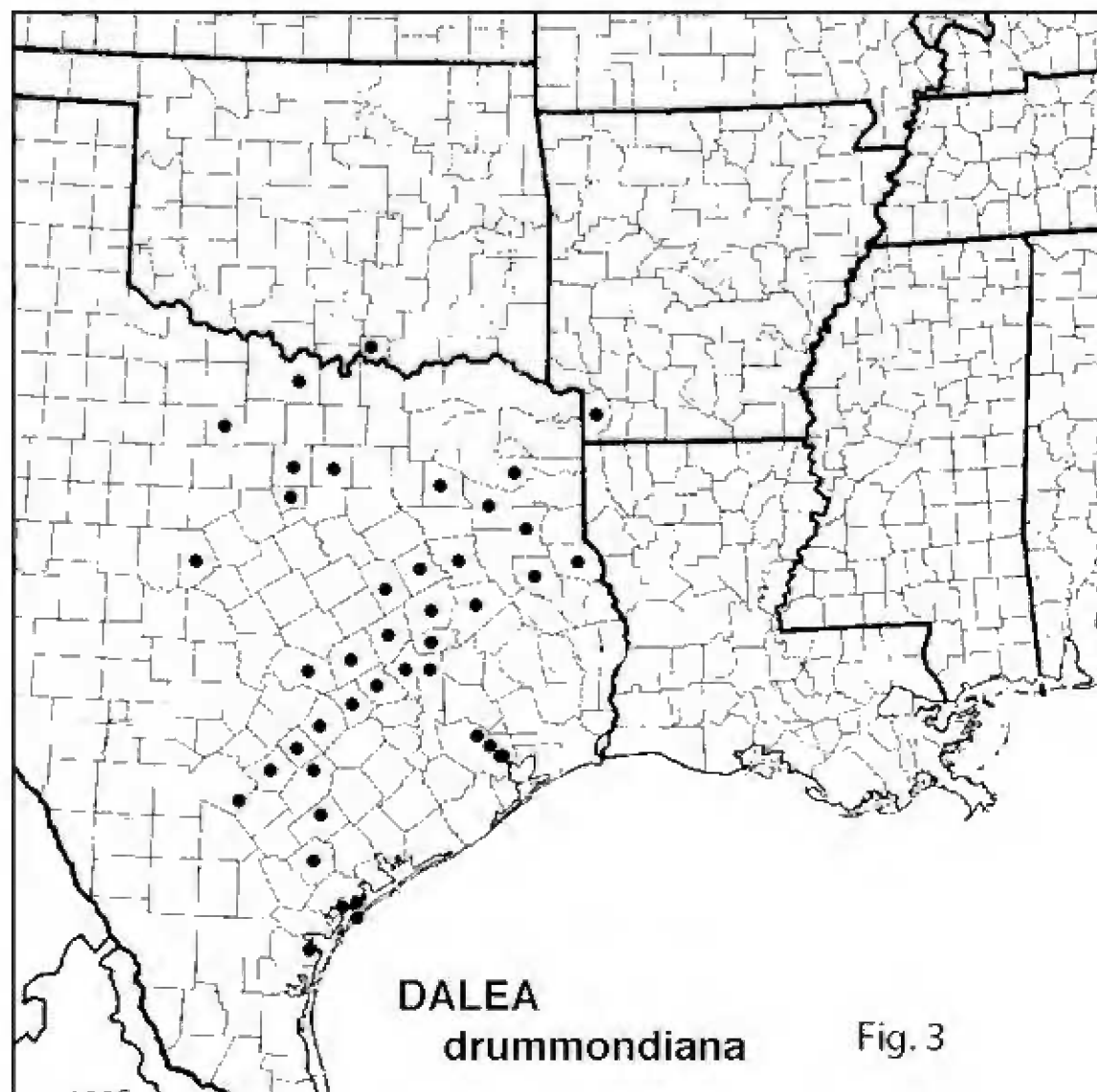


Fig. 3. Distribution of *Dalea drummondiana*.